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CONTENTS

	Page
CœLENTERATES FROM LAGUNA BEACH— <i>H. H. Nininger, A. M. Bean</i>	59
NOTES ON ANNELIDS COLLECTED DURING 1917 AT LAGUNA BEACH.....	60
SOME CHITONS COLLECTED DURING THE SUMMER OF 1917.....	63
A CUMACEAN FROM LAGUNA BEACH— <i>H. H. Nininger</i>	64
A PARASITIC COPEPOD FOUND AT LAGUNA BEACH— <i>A. M. Bean, Harry Staples</i>	65
NOTES ON THE CENTRAL NERVOUS SYSTEM OF HOLOTHURIANS— <i>W. A. Hilton</i>	66
NOTES ON FLAT WORMS AT LAGUNA BEACH— <i>W. L. Grow, D. L. Darsie</i>	68
BRANCHIOSTOMA CALIFORNIENSE GILL.....	68
FURTHER OBSERVATIONS ON THE MOUNTAIN SHEEP OF THE SAN GABRIEL RANGE— <i>William A. Hilton</i>	69
SCORPIONS FROM THE CLAREMONT-LAGUNA REGION.....	70
BLEPHARIPODA OCCIDENTALIS— <i>J. Caldwell</i>	71
SEROLIS CARINATA— <i>Harry Staples</i>	72
NOTES ON SPONGES AT LAGUNA BEACH— <i>W. L. Grow</i>	73
THE CENTRAL NERVOUS SYSTEM OF A LONG-ARMED SERPENT STAR— <i>W. A. Hilton</i>	75
DOLICHOGLOSSUS PUSILLUS.....	76
PYCNOGONIDS COLLECTED DURING THE SUMMER OF 1917 AT LAGUNA BEACH— <i>W. A. Hilton</i>	77
SOME ECHINODERMS OF LAGUNA BEACH.....	78
A LIST OF ODONATA CHIEFLY FROM LAGUNA BEACH— <i>D. L. Darsie</i>	79
A LIST OF SMALL MAMMALS FROM THE CLAREMONT-LAGUNA REGION— <i>H. C. White</i> ..	80

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Journal of Entomology and Zoology

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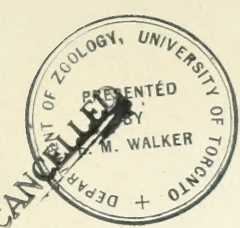
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THE JOURNAL OF ENTOMOLOGY AND ZOOLOGY

William A. Hilton, Editor

Claremont, California, U. S. A.



Coelenterates from Laguna Beach

H. H. NININGER, A. M. BEAN AND OTHERS

Corymorpha palma Torrey. Found at several places on the sand flats near Balboa and Anaheim bays.

Tubularia crocea Ag. Abundant on wharf and piles in Balboa bay.

The only jellyfish which we have had determined is *Scrippsia pacifica* Torrey, Det. Torrey. From surface waters near shore.

Cribina xanthogrammica Brandt, Det. Torrey. The shore anemone is very abundant and variable.

Epiactis prolifera Ver. Specimens of red anemones, brown anemones with red stripes and brown anemones were found under rocks at low tide.

A small sand species was found on the sand flats at Anaheim Landing by W. A. H. in September, 1917. We have not found any at Balboa or at Laguna which seem to be this species.

Edwardsia sp. This was found very abundantly at Balboa bay and Anaheim Landing, in the sand at low tide. W. A. H.

Cerianthus æstuari Torrey. Possibly a small specimen collected at Balboa Bay may have belonged to this species. W. A. H.

Cerianthus johnsoni Torrey. Two specimens of this species were collected at Balboa Bay by Nininger. The following is his account of the species:

"The anemone was taken from the muddy shore at low tide. In life the spread of the tentacles was eight and a half inches. There was a folding in toward the mouth of one or more of the tentacles almost all the time. Possibly they were carrying food. In this the tentacles acted independently. When a particle was in the grasp of the group of small central tentacles, the large tentacle or tentacles first involved returned to their former positions at once.

The tube was found to be imbedded in the mud to a depth of sixteen inches. Near the bottom of the tube the anemone was fastened to it by means of a cementing substance much like the inner layers of the tube.

The color of this specimen was pink. The color of another one was grayish with the tentacles banded with pink."

Living in or on the tube of one of these was an adult of the small crab *Pinnixa littoralis* Holmes.

Teleso ambigua Nutting. These little alcyonarians are quite abundant at Laguna Beach, on the under sides of stones.

Psammogorgia torreyi Nutting. Stems of this large branched alconarian were dredged near Balboa in about twenty fathoms by A. M. Bean.

From low tide and from dredging near shore one or possibly two species of stony corals were collected.

Several small anemone-like forms were collected among algæ and among the roots of eel grass. One was a bright red with few tentacles. One had a light body with blue tentacles.

(Contribution from the Zoological Department of Pomona College.)

Notes on Annelids Collected During 1917 at Laguna Beach

A number of sipunculids were collected but not as yet determined. There was one large species found in the sand at Balboa and one small species found in the sand and in a sponge. At Laguna in the roots of eel grass there were two medium sized forms found, one with smooth gray skin, the other with rough brown skin, and one small kind similar to the small one found at Balboa. In a worm colony of *Sabellaria* a rough kind was found which seemed like one of the others.

SYLLIDÆ

Trypanosyllis gemmipara Johnson. Specimens of this large flat syllid were a light pink. Most were obtained by dredging off shore at a depth of from 10 to 15 fathoms. A few were collected from algæ along shore.

Syllis elongata Johnson. One specimen determined by Hamilton. Others obtained may be the same species.

A large number of other specimens are not yet determined.

APHRODITIDÆ

Several specimens from holdfasts and from dredgings have not yet been determined.

AMPHINOMIDÆ

Erythoe californica Johnson. Under stones.

Euphrosyne aurantiaca Johnson. A number of these short yellow worms were obtained from holdfasts.

POLYNOIDÆ

Halosydna insignis Baird. A large number of these collected among mussels and under stones.

H. pulchra Johnson. Some of these found on *Stichopus*. A number of other specimens have been sent away for determination, including some from the sand flats of Balboa and from among hydroids.

PHYLLODOCIDÆ

Phyllodoce ferruginea Moore. Under stones at Laguna Beach.

P. medipapillata Moore. This was the largest of the family found at Laguna. Among holdfasts and in the tube masses of *Sabellaria californica* Fewk.

A number of other species remain to be determined.

NEREIDÆ

Nereis agassizi Ehl. Very common along shore and in holdfasts.

N. vexillosa Grube. A few of these were determined.

N. procera Ehl. Some of these found with the others of the family.

N. virens Sars. A few specimens, smaller specimens than those reported by Hamilton some years ago.

A number of other species will probably be added from the undetermined material.

NEPHTHYDIDÆ

Nephtys caeca Fab. Low tide, Laguna Beach. One specimen.

LEODICIDÆ

Marphysa californica Moore. A large and a smaller specimen dredged just off shore.

M. stylobranchiata Moore. Collected on the sand flats, Balboa.

Dioparta californica Moore. Dredged off shore at Laguna Beach. Also found on the mud flats at Balboa. The tube of the dredged form is of shell fragments, that from Balboa is made of sand and sticks.

Several other species of the family were collected.

LUMBRINERIDÆ

Lumbrineris erecta Moore. Holdfasts, eel grass. Among the tubes of *Sabellaria californica*.

Aracoda semimaculata Moore. Among mussels.

A number of undetermined forms may belong to this family.

GLYCERIDÆ

Glycera rugosa Johnson. Low tide.

Glycera nana Johnson. Quite a large specimen found at low tide.

ARICIIDÆ

Nainereis longa Moore. Found at low tide.

N. robusta Moore. Found at low tide.

Scolopus elongata Johnson. Balboa sand.

Several others not yet determined.

CIRRATULIDÆ

Cerratulux luxuriosus Moore. Low tide. Bright red.

C. spirobranchus Moore. Eel grass roots.

TEREBELLIDÆ

Terebella californica Moore. This seems to be the most abundant of the family at Laguna. In eel grass roots. Red gills, yellow fillaments.

Amphitrite spiralis Johnson. Red-brown, body lighter. Low tide. Laguna.

CAPITELLIDÆ

Specimens which seemed to belong to this family were found at Balboa.

CHLORHÆMIDÆ

Trophonia inflata Tred. Under stones.

OPHELLIDÆ

Ophelina magna Tred. Mostly dredged. Possibly a young of this was collected at Balboa.

O. mucronata Tred. Dredged.

AMPHICTENIDÆ

Pectinaria brevicoma Johnson. Dredged in 10 fathoms off shore. A small but perfect specimen seems to differ from Johnson's descriptions slightly. A number of perfect tubes were obtained.

MALDANIDÆ

Clymenella rubrocincta Johnson. These were abundant on the mud flats exposed at low tide, both at Balboa Bay and Anaheim Landing. Hamilton reported them from eel grass roots near Laguna. I have found some in similar places.

AMMOCHARIDÆ

Ammochares occidentalis Johnson. Several specimens were found among the roots of eel grass at Laguna last Summer. The tube of one specimen at least was made of overlapping but regular fragments of shell. Another specimen was dredged with a similar regular tube of shell fragments.

SABELLIDÆ

A number of species were collected, but none as yet determined. *Sabella elegans* Bush seems to be in the collection. Most specimens were taken from holdfasts or dredged off shore. One was found in the neighborhood of a sabellarian worm colony and some were under rock ledges.

SERPULIDÆ

But few of these were collected.

Serpula colombiana Johnson was the only one determined.

HERMELLIDÆ

Sabellaria californica Fewkes. Enormous colonies of this species are found along the shores in many places.

S. cementarium Moore. This species is usually found farther out and although common is usually found in much smaller numbers in more isolated tubes.

In the lakes back from Laguna Beach and in the streams, a leech is very common. Specimens sent to the U. S. Nat. Museum were determined as *Erpsodella punctata* Leidy. W. A. H.

(Contribution from the Zoological Department of Pomona College.)

Some Chitons Collected During the Summer of 1917

A number of specimens were sent to Dr. S. S. Berry and determined as follows:

Leptochiton cf. *rugatus* Cpr. Small white. Dredged 10 fathoms.

Callistochiton palmulatus Cpr. Dredged 10 fathoms. Ends ribbed.

Callistochiton cf. *decoratus* Cpr. Flat margins of valves rough. 1.15 by 9 mm.
Low tide.

Mophalia juv. cf. *acuta* Cpr. Broad margins, speckled brown irregular spots.
Dredged 10 fathoms.

M. mucosa Gould. Low tide.

Ishnochiton (*Lepidozona*) *clathratus* Rve. Dredged and low tide.

I. (Stenoplax) conspicuus Cpr. Large species, low tide.

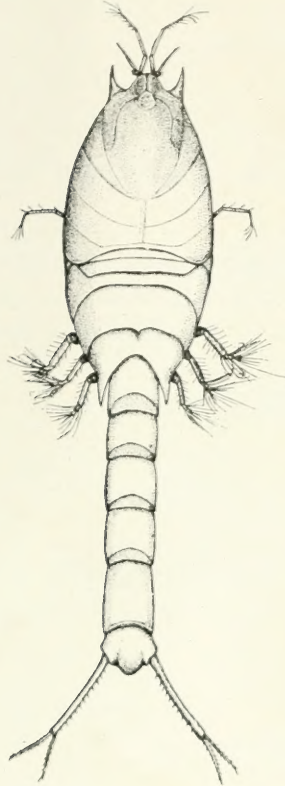
Cyanoplax hartwegii Cpr. Common flat circular form. Low tide.

Nuttallina cf. *fluxa* Cpr. Low tide.

(Contribution from the Zoological Department of Pomona College.)

A Cumacean from Laguna Beach

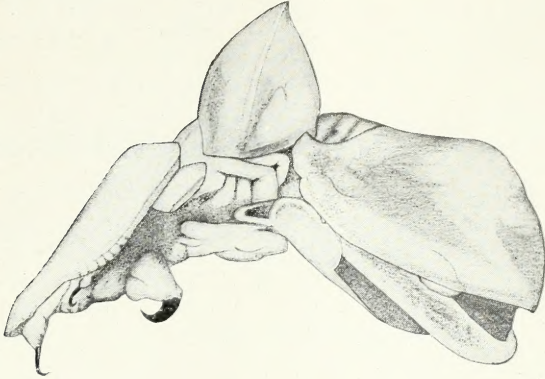
H. H. NININGER



Specimens of a little red-lined cumacean were collected by dredging in about fifteen fathoms of water just off shore, especially near Emerald Bay. These were determined by the U. S. Nat. Museum to be *Colurostylis occidentalis* Calman.

A Parasitic Copepod Found at Laguna Beach

A. M. BEAN AND HARRY STAPLES



Parasitic Isopod

Prof. A. M. Bean obtained the copepod shown in side view, enlarged four times, from the gills of *Mola mola*. The specimen was determined by the U. S. Nat. Mus. at Washington, to be *Cecrops lateillii* Wilson. The drawing is by Harry Staples.

Notes on the Central Nervous Systems of Holothurians

WILLIAM A. HILTON

A number of attempts were made to stain the central nervous system of *Stichopus* with methylene blue, but without success. Dissections were most successfully made when the animals were fixed in hot mercuric chloride. Specimens injected were filled with the fluid and the whole body was later immersed. Specimens with the body distended were obtained in this way and the nerve trunks were easily followed after the removal of the longitudinal muscle bands. Parts of the nerve trunks were removed and sectioned.

Specimens of *Leptosynapta* were imbedded and sectioned whole and a few young of *Stichopus* were sectioned whole.

Very little difference was noted between radial and circumoral nerves at different places. The general character of the nervous system was very much as found in other echinoderms. The deep nerve bands were not well marked in many of the sections, but groups of cells more or less joined with the superficial trunks were found without difficulty.

In adult *Stichopus* the cells are fairly numerous out in the fibrous area of the superficial band. The radial nerves show a bilateral division as there is often a depression on the inner side which approaches the appearance of a cavity.

In my preparations the cell body is not very distinct from the nucleus. There may be six or more layers of cells at the edge of the outer band. The nerve processes consist of many fine strands running in through the fibrous area, but there seems to be in addition to this a groundwork of material which may in large part be made of fibers and fibrils whose identity could not be discovered.

In the younger specimens of *Stichopus* the fibers were more prominent and the cells in the fibrous area were markedly fewer in numbers. The fibers for the most part seem to run the long way of the nerve trunk. Especially were long strands found in the circumoral ring, although fibers could be seen crossing in considerable numbers as well. In the radial nerves the crossing and interweaving of the nerve fibers as they show in cross section is very intricate.

Small nerve trunks were followed along the tubes of the water vascular system. These were seen to have a similar but simpler structure than the radial nerves.

In *Leptosynapta* a very similar sort of nervous system was found, but the nerve cells were larger and on the whole fewer in number. The deep nerve trunks were but poorly represented.

The fibers from the basal cells show very clearly both in the superficial and the deep nerves and the fibers cross in a complex manner at all levels. There are but few cells scattered in the fibrous area and there is apparently but little ground substance. The fibers stand out more clearly than in *Stichopus*. Possibly more fibers from the outer margin cross near the inner. This may be due to the branching at the ends of the fibers.

Fibers and fibrils are all about the same size in *Stichopus* and *Leptosynapta*. The circumoral nerve ring seems thicker than the radial, but this may in part be due to contraction. The fibers in the circumoral ring seem smaller than in the radial. In all parts there are many crossings of fibers in the fibrous portions at all angles.

Small cells at the bases of tentacles are similar to the radial nerves in structure, but with fewer more flattened cells.

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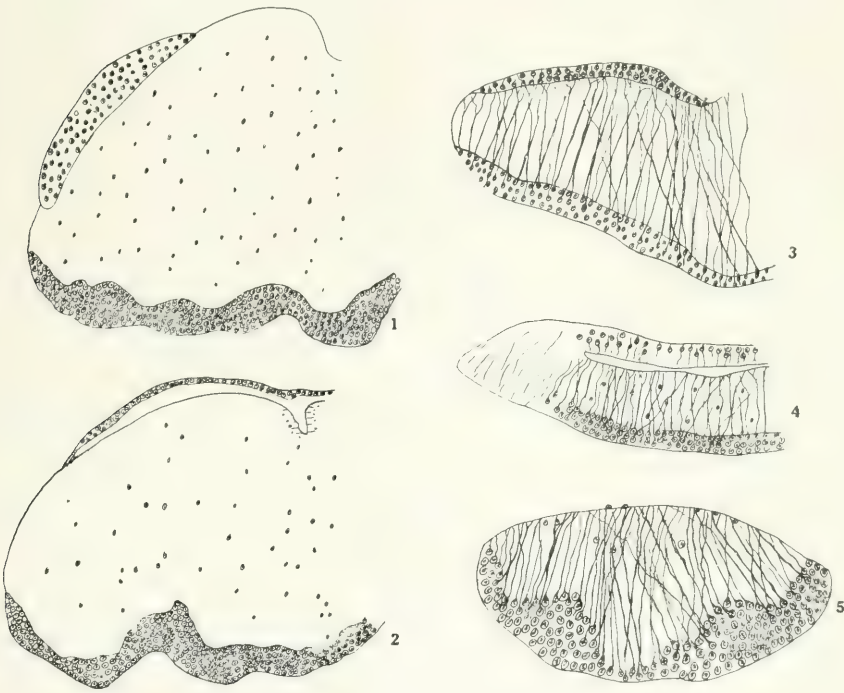
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Central Nervous System Holothurians

Fig. 1 and 2. Drawings of cross sections of the radial nerve of Stichopus. A little more than one-half of the section is shown. The smaller deep strand is shown on the upper side. X 350.

Fig. 3 and 4. Sections through the radial nerves of a young Stichopus. About one-half of the radial nerves are shown in cross section. X 350.

Fig. 5. Cross section of the radial nerve trunk of Leptosynapta. X 350.

(Contribution from the Zoological Department of Pomona College.)

Notes on Flat Worms at Laguna Beach

W. L. GROW, DARSIE L. DARSIE

We have not had any of these determined as yet. We should be glad to collect specimens for anyone who would determine them for us.

One or two kinds of tricladids are found under stones. Most of these are brown or gray, some are pink and some almost red.

At least one species of polycladid is found commonly under stones. They are nearly circular in outline and may possibly belong to the genus *Leptoplana*.

Another species nearly circular in outline was collected by Mr. Grow in 1916. Others were collected in 1917. They were black with narrow longitudinal red lines.

A large grey species was collected by Mr. Darsie in 1917. Two were obtained in a tide pool near Boat Cañon. They swam by means of rapid undulating movements of the frilled edges of the body.

(Contribution from the Zoological Department of Pomona College.)

BRANCHIOSTOMA CALIFORNIENSE GILL

Specimens of Branchiostoma have been dredged at Laguna Beach for the past three years. Prof. A. M. Bean first brought them in from just beyond the Laboratory in from 10 to 15 fathoms of water. Almost every haul near this place in the coarse



rough sand and shell debris which is abundant there. The drawing is by Charlotte Johnson.

Further Observations on the Mountain Sheep of the San Gabriel Range

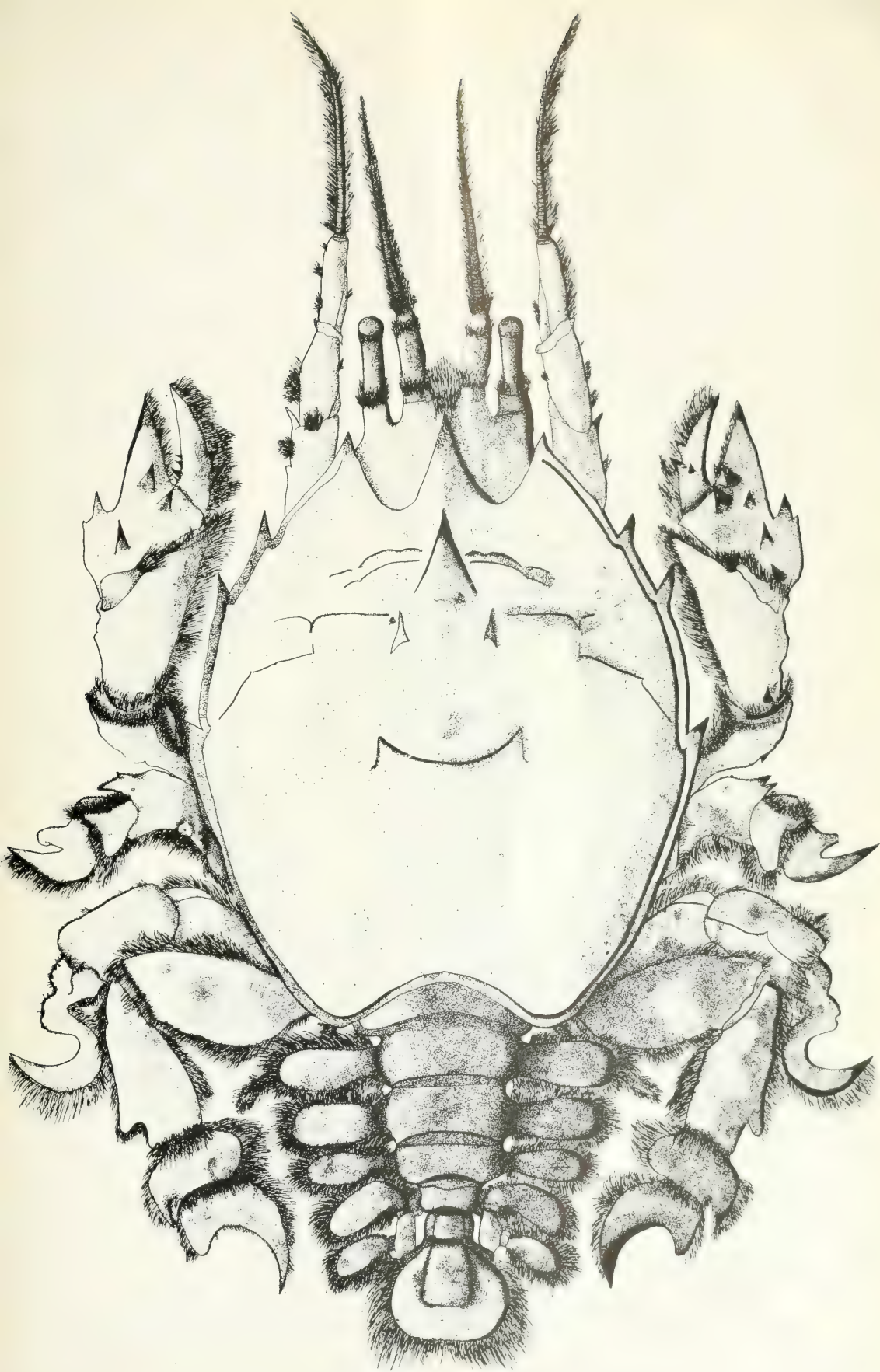
WILLIAM A. HULTON

On the 15th of December, 1917, I had the good fortune to come upon quite a number of the mountain sheep which range over some of the highest and roughest elevations of these mountains. Occasionally one or several sheep have been seen by those who have been climbing over Ontario, Cucamonga or Telegraph peaks. As a rule the animals are very shy and give nothing more than a glimpse. The exact identity of these animals and their total number remains unknown. It has been suggested that they are *Ovis canadensis nelsoni* C. H. M. These that I saw are much like the specimens in the college museum which were collected in Lower California, but the horns of the male seemed more massive in the San Gabriel specimens so far as I could keep the size and proportions in mind. Just how many Mountain sheep there are in this range we have no clear way of telling. I believe that the rather large band which I saw is not all of them. Those seen by me on December 15th were within a hundred feet from the top of the ridge of Ontario peak. They were in the dense forest which grows near the top of the mountain on the San Antonio cañon side. As we ascended the trail we came in sight of seven or eight adult animals partly hidden among the bushes. They were not farther than one hundred and fifty feet away and did not at first see us or take alarm, so it was possible to watch them for some time. When a large ram caught sight of us he suddenly stopped walking about and eyed our every movement, then when we came a little nearer the whole band ran to the top of the ridge and it was possible to count them. There were twenty-four in all, at least six large rams, six females and six half grown young. The exact number of each was impossible to make out.

Scorpions from the Claremont-Laguna Region

The two species of scorpions which have been found in the Claremont Laguna Region are shown in the accompanying photograph by L. Cooper. The smaller, *Uroctonus pharodactylus* Wood, is found throughout the region except in the higher mountains. The larger *Hardurus hirsutus* Wood, is more of a desert species and seems to be confined to the more desert portions of the region.





Blepharipoda occidentalis Randall.
Specimen from Laguna Beach. Drawing by J. Caldwell.



Serolis carinata Lock. Drawing by Staples.

Notes on Sponges at Laguna Beach

W. L. GROW

During two summers Mr. Grow collected and studied sponges at Laguna Beach. We have not been able to get any of the local forms satisfactorily determined, and the notes here given are simply suggestions. We shall be glad to turn over an abundance of material to any one who wishes to work on the group.

At least three kinds of simple calcareous sponges were found under rocks and on kelp holdfasts.

Leucosolenia sp.? is found at times under rocks at low tide. The sponge is about 10 to 12 mm high and narrower at the base, white, slender, not very abundant.

At least two species of *Sycon* or *Grantia* were found under stones and on holdfasts. Those from deeper water have longer spicules.

The most conspicuous sponge at Laguna is found in masses under rock ledges. It is often quite large and irregular in outline. It is sometimes divided into many partially separate colonies and again it may occur in a smooth mass. It is pure white. Possibly it belongs to the genus *Petrostoma*. In its cavities several animals often retreat, small crabs of the genus *Pachygrapsis* and young and adults of the crab *Pachycheles rudis* Stimp. and the isopod *Cirolana harfordi* var. *spongicola* Staf.

A species of *Clathrina* occurs at Laguna Beach now and then. During some winters this stalked white, mushroom-like species is found among tufts of Bryozoa.

The so-called sulphur sponge is common under stones and rock ledges. There is no differentiation into individuals, the oscula are scattered over the surface, which may be very irregular. Great masses of these yellow sponges are often found. The only animal associated with them seems to be the limpet *Tylodina fungina* Gab.

Pink encrusting sponge. Found on shells, seaweed, etc. Pink-white, smooth, few openings evident. Calcareous spicules triaxons and monaxons. It is rather thin.

White encrusting sponge (I) White, fused at the base, but with distinct, erect individuals each with osculum. Often covered with Bryozoa. Triaxon spicules and spongin fibers present. Under ledges of rock.

White encrusting sponge (II). Soft white, but tenaceous. Peels off from shells and twigs. Has only triaxon spicules. Found on rock surfaces, seaweed, kelp holdfasts.

Red sponge. Bright red, feels spongy. Encrusts a base and sends out tufts which fuse. Triaxon spicules. Spongin fibers, rather broad cavities. On seaweeds and under rocks.

Yellow sponge. From a yellow to an ocher. Never the color or texture of the sulphur sponge. Semi-encrusting with some erect irregular portions which may fuse again with the parent mass. Parts may wind and twist among bryozoan masses. Monaxon spicules, granular structure. Surfaces of rocks, rock ledges and seaweeds.

White dermal sponge. Soft spongy, greyish white. Fibers or strands easily seen by the naked eye. Grows under ledges. Composed of spongin fibers. Some dry bits cast up on the shore seem to be of as good quality as a first class bath sponge.

Massive pink-white sponge. These are calcareous in part, pink on the surface and very dense. Channels not well marked. Large masses under rock ledges.

In addition to the above there is a very bright red sponge which is found under stones.

At Balboa bay among some oysters there is a large irregular pyramidal dermal sponge of a dark brown color.

(Contribution from the Zoological Department of Pomona College.)

The Central Nervous System of a Long-Armed Serpent Star

WILLIAM A. HILTON

The specimens were found in the sand of Balboa Bay. A specimen was determined by Dr. Clark as probably *Amphiodia barbara* Lyman. When obtained these creatures move their arms very vigorously. When in the sand they bury themselves very effectively. Out of the sand the arms are not moved to so good purpose, and they become tangled.

The great length of the arms and the smallness of the disc made these interesting objects for study. Sections were made of the arms close to the disc and at their tips. In the specimen from which the sketches were made, the arm sectioned was 250 mm long and the disc 10 mm in diameter. The arms do not taper much and the radial nerve is about the same size for some distance. At about one centimeter from the tip of the arm the diameter of the nerve trunk is much less to correspond to the smaller diameter of the arm. At the very tip of the arm the nerve cord is of course very much reduced, but it is larger in proportion than it was at other parts of the arm. (Contribution from the Zoological Department of Pomona College.)

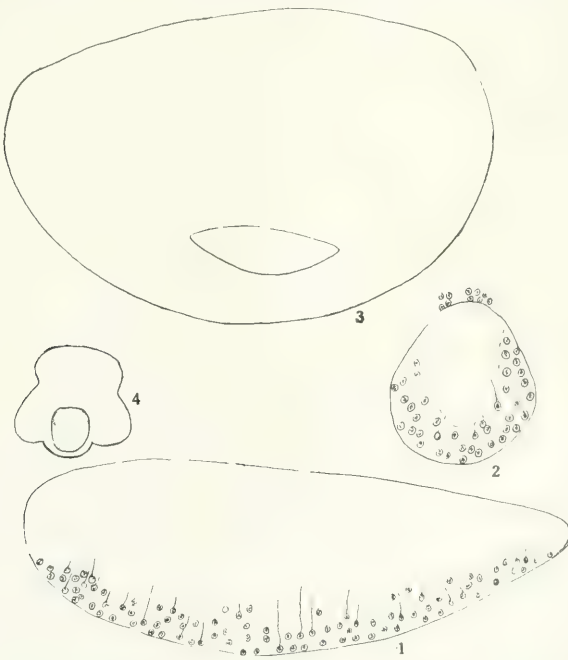


Fig. 1. Cross-section of the radial nerve of *Amphiodia*, section taken near the disc. X350. Aboral side up.

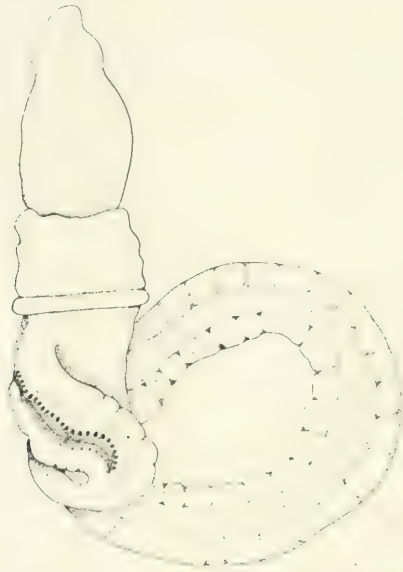
Fig. 2. Section across the radial nerve near the tip of the arm. Aboral side up. X350.

Fig. 3. and Fig. 4. Sections across the arm at the base and at the tip, showing the outline of the arm with the nerve trunk within. Aboral side up. X70.

Dolichoglossus Pusillus Ritter

WILLIAM A. HULTON

The writer first discovered the occurrence of *Dolichoglossus* in the sand flats at Balboa Bay, in August, 1917. In one little cove they were found to be very abundant. Large numbers of old burrows were evident in many places and the castings in some places gave clear indications of many animals. In certain places they were the most abundant animals. Specimens were collected once or twice a month for several months, and a large number of tubes were examined for embryos. Eggs and young of various stages were obtained at almost any time, so it seems quite possible that there is no absolute breeding season. Further observations may settle this point a little later. The sand cases or burrows are so delicate that they are easily broken,



yet the best way to collect the eggs and adults seems to fix large numbers of the animals within the cases and then later open the sand tubes and remove the specimens. In some cases the living animals were taken within the tubes and later removed at the laboratory.

Other places where *Dolichoglossus* occurred were found to be on the mud flats the other side of the bay from the first situation and in fewer numbers at Anaheim Landing. Later a few were obtained under eel grass not far from the Laboratory at Laguna Beach.

(Contribution from the Zoological Department of Pomona College)

Pycnogonids Collected During the Summer of 1917 at Laguna Beach

WILLIAM A. HILTON

During the summer no particular attention was given to the collection of these creatures, but all that were found were saved. Some places where they were known to be abundant were not searched at all. In consequence of this, the larger forms were especially obtained, especially those found under stones. There are a number of new locality records. Something over 200 specimens were collected.

Pallene californiensis Hall. One specimen Aug. 19.

Lecythorhynchus marginatus Cole. One with eggs, date? Some young, in all 38, most were found among stones, among muscles and a few in red algæ.

Ammothella tuberculata Cole. In August 8 specimens. No eggs. Sept. 1, 7 under stones. Sept. 13, 2 specimens. Sept. 16, 8 of which three had eggs. In all 25.

A. bi-unguiculata var. *californica* Hall. During July 4 specimens, one with eggs. August, 11 with eggs, 21 without. September, 15 with eggs, 13 without. In all, 64.

Ammothella spinosissima Hall. August, 2 with eggs, 16 others. September, 1 with eggs, 2 without. September 16, 3 without eggs. These last were found in among the worm cases of *Sabellaria californica*.

Ammothella spinifera Cole. Five specimens with eggs under stones during August, one specimen without eggs.

Tanystylum intermedium Cole. July, six specimens in Bryozoa. August, 17, three among alcyonarian colony. No eggs. August, 19, under stones, one with eggs, five others. September 1, 14 without eggs, one with. Stones.

T. orbiculare Wilson. One specimen with eggs under stone. August. Eight among red algæ, no eggs. September 1, 17 without eggs, four with eggs under stones.

Clotenia occidentalis Cole. One specimen with eggs and young dredged, Aug. 27. One specimen without eggs.

Anoplodactylus californicus Hall. One without eggs dredged August 27. One under a stone, August. No eggs.

Phoxichilidium femoratum Cole. Sept. 1st, one immature.

Halosoma viridentestinalis Cole. Among Bryozoa and under stones. Aug. 19, two with eggs, four others. Sept. 1, one with eggs, five others.

Eurydice spinosa Hilton. One with eggs, August 17. Locality uncertain. Four with eggs, one without, Sept. 17, 1917, from holdfast.

This species was described from a specimen collected at Laguna Beach in September, 1915. Judging from the number of specimens obtained from the holdfast, the species seems to be from deeper water.

Pycnogonum sternsi Ives. Sept. 2, four young under stones. Sept. 3, one young.

Nymphon sp.? Sept. 1, one species of what apparently belongs to this genus was found, a single specimen well inshore.

Species living among colonies of *Sabellaria californica* were:

Ammothella bi-unguiculata var. *californica* Hall. *A. spinosissima* Hall.

Deep water forms seem to be: *C. occidentalis*, *A. californicus* and *E. spinosa*.

(Contribution from the Zoological Department of Pomona College)

Some Echinoderms of Laguna Beach

In the summer of 1915, Prof. A. M. Bean dredged an injured specimen of heart urchin. It seems to be the same as the one labeled *Lovenia cordiformis* Gray, in the museum of the Scripps Institution at La Jolla.

Since 1915 we have dredged large numbers of the little urchin, *Lytechinus anamesus* H. L. C., Det. H. L. C.

The sand dollar *Dendraster excentricus* Esch. has been dredged every summer, especially off Emerald Bay. It is also very common in places on the mud flats at Balboa and Anaheim Landing.

The starfish *Ludia foliata* Grub. has been obtained but once. The starfish *Henricia latinscula* Fisher Det. H. L. C., whose central parts were yellow and whose arms had purple tips, has been collected but once, by Mr. Grow in 1916.

But one specimen of the basket star has been taken. It was determined for us by Dr. H. L. Clark. It is *Gorgonocephalus eucnemis* M. & T.

The following serpent stars have been found every summer at low tide: *Ophioderma panamensis*. Lutk. Det. H.L.C. is the largest species. *Ophioplocus esmarki* Lyman, Det. H.L.C. Usually unicolored. *Ophionereis annulata* Le Conte. Compared with Fisher's determined specimens. *Ophiothrix spiculata* Le Conte. This variable and beautiful form is found in many places, among mussel beds, in holdfasts and dredged.

Ophiocryptus maculosus Clark. Det. H. L. Clark. These have been collected from holdfasts.

During the summer of 1917 a curious long-armed serpent star was collected. It was determined for us by Dr. H. L. Clark, but as the disc fell off the determination is not quite sure. "I am cataloging it as *Amphiodia barbaræ* Lyman, known only from Santa Barbara. But the arms of this specimen are much longer than the typical *barbaræ*, so it may be *urtica*. One must have the disc to be sure."

We hope to collect more specimens of this another summer. The holothurians so far are as follows:

The common *Stichopus californicus* Stimp. and the large red dredged *S. johnsoni* Heel.

Several specimens of a brown *Thyone* have been obtained. Several red with black tentacles which Dr. Clark thinks may belong to the genus *Cucumaria*. Another specimen sent in 1917 to Dr. Clark, "It is apparently *Cucumaria curata* Cowles."

In 1914 a single specimen of *Psolus* Sp. was obtained.

White and pink specimens Dr. Clark has determined as *Leptosynapta inhaerens* O.F.M.

(Contribution from the Zoological Department of Pomona College)

A List of Odonata Chiefly from Laguna Beach

DARSIE L. DARSIE

The determinations were made for us by Dr. Munz.

DRAGON FLIES

Libellula saturata Uhl. Sub. Sp. *croceipennis* Selys. Found at Laguna and Claremont. Common large form with red-brown body and basal two-thirds of wings red-brown.

Plathemis lydia Durury. Large. Wings banded near body and near center. Female has slighter bands. Common Claremont and Laguna.

Sympetrum illotum Hagen. Medium size. Tinge of brown on clear wings, dark brown body in dry specimen. Laguna Beach.

S. corruptum Hagen. Medium size. Clear wings, light body. Common Claremont and Laguna.

Aeshna multicolor Hagen. Large. Clear wings, colored body. Laguna.

Erythemis simplicicollis Say. S. sp. *collocata* Hagen. Medium size. Clear wings, blue body. Laguna Beach.

Tramea lacerata Hagen. Chocolate brown marks at base of hind wings. Laguna Beach.

Anax walsinghami MacLachlan. Clear wings. Very large. Our largest species. Laguna Beach.

DAMSEL FLIES

Heterina americana Fab. Base of wings bright red. Claremont and Laguna.

Argia virida Hagen. Male blue body. Clear wings. Claremont and Laguna.

Emallagma cyathigerum? Carpentier.

Calaenura denticollis Burmeister. Very small. Claremont.

Amphiagrion saucium Bur. Red body. Very small.

(Contribution from the Zoological Department of Pomona College)

A List of Small Mammals from the Claremont-Laguna Region

HALSTEAD C. WHITE

The mammals were all but several bats collected by H. G. White. All determinations are by the Museum of Vertebrate Zoology of the University of California.

Myotis evotis Allen. Long-eared bat. Claremont.

Nycteris borealis teliotis Allen. Western Red Bat. Claremont.

Scapanus latimanus occultus Grinnell and Swarth. Southern California mole. Claremont and Webber's camp, San Gabriel Canyon.

Reithrodontomys megalotis longicauda Baird. Long-tailed Harvest Mouse. Glen Ranch. Santa Ana River.

Peromyscus maniculatus gambeli Baird. Gambel White-footed Mouse. Santa Ana River. Pomona Hills.

P. californicus insignis Rhoads. Southern Parasitic Mouse. Glen Ranch. Claremont. Laguna Beach.

P. eremicus fraterculus Miller. Dulzura white-footed mouse. Claremont. Laguna Beach.

Neotoma fuscipes macrotis Thomas. Long-eared Wood Rat. Laguna Beach.

N. intermedia intermedia Rhoads. Intermediate Wood-rat.

Microtus californicus californicus Peale. California Meadow Mouse. Coble's canon. Santa Ana River, near Corona.

Mus musculus Lin. At Laguna Beach, not far from houses.

Perognathus californicus femoralis Allen. Dulzura Pocket Mouse. Glen Ranch. Laguna Beach.

Tomomys bottae pallescens Rhoads. San Diego Pocket Gopher. Glen Ranch.

(Contribution from the Zoological Department of Pomona College)

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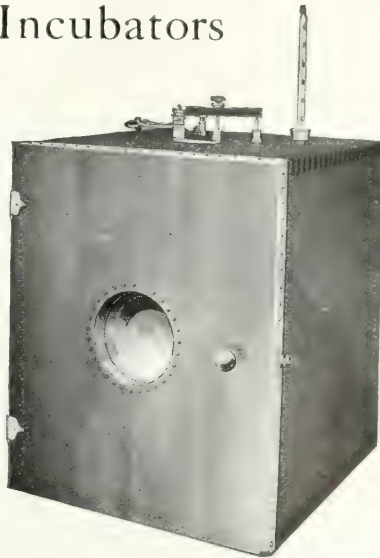
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